

WHAT IS CLAIMED IS:

1 1. A fixation plate kit for fixation of a distal radius fracture, the fixation plate kit
2 comprising:

3 an elongated plate configured to be mounted to the volar surface of the distal radius
4 and having a distal portion and a proximal portion, the distal portion extending from and
5 forming an angle with the proximal portion, and including at least one line extending from
6 the distal portion; and

7 at least one tensioning device configured to pass through an opening in the elongated
8 plate, through a channel in the radius, and to be tightenable to fix the elongated plate to the
9 radius.

1 2. The fixation plate kit of claim 1 wherein the distal portion includes at least
2 one opening configured to receive the tensioning device.

1 3. The fixation plate kit of claim 1 wherein the proximal portion includes at least
2 one opening configured to receive the tensioning device.

1 4. The fixation plate kit of claim 1 wherein the proximal portion is narrower than
2 the distal portion.

1 5. The fixation plate kit of claim 1 wherein the proximal portion has a width and
2 includes a curved shape across the width and the width is configured to generally follow the
3 curvature of the volar surface of the radius, whereby the proximal portion can be stably
4 seated against the volar surface of the radius when the elongated plate is mounted to the
5 radius.

1 6. The fixation plate kit of claim 1 wherein the distal portion forms a generally
2 T-shaped configuration with the proximal portion.

1 7. The fixation plate kit of claim 1 wherein the distal portion forms an angle with
2 the proximal portion, whereby the proximal portion follows the volar configuration of the
3 distal head of the radius.

1 8. The fixation plate kit of claim 7 wherein the angle between the distal portion
2 and the proximal portion is between approximately 5° and 45°.

1 9. The fixation plate kit of claim 7 wherein the angle between the distal portion
2 and the proximal portion is between approximately 10° and 30°.

1 10. The fixation plate kit of claim 7 wherein the angle between the distal portion
2 and the proximal portion is between approximately 10° and 20°.

1 11. The fixation plate kit of claim 7 wherein the angle formed between the distal
2 portion and the proximal portion includes a gradual transition.

1 12. The fixation plate kit of claim 1 wherein the tine extends from the distal
2 portion at an angle with respect to the proximal portion of between approximately 75° and
3 115°.

1 13. The fixation plate kit of claim 1 wherein the tine extends from the distal
2 portion at an angle with respect to the proximal portion of between approximately 85° and
3 105°.

1 14. The fixation plate kit of claim 1 wherein the tine extends from the distal
2 portion at an angle with respect to the proximal portion of approximately 90°.

1 15. The fixation plate kit of claim 1 wherein the kit further comprises a drill bit
2 configured to drill a hole in bone tissue.

1 16. The fixation plate kit of claim 1 further comprising a guide for drilling holes
2 in bone to place the tine.

1 17. The fixation plate kit of claim 1 wherein the guide includes at least one
2 opening and an insert configured to be received in the opening.

1 18. The fixation plate kit of claim 1 further comprising written instructions for
2 use.

1 19. The fixation plate kit of claim 1 further comprising an instructional video.

1 20. The fixation plate kit of claim 1 further comprising a tensiometer mounted to
2 the tine and configured to measure a tension in the tine.

1 21. The fixation plate kit of claim 1 further comprising a monitor, wherein the
2 tensiometer transmits a signal indicative of strain in the tine and the monitor is configured to
3 receive the signal.

1 22. The fixation plate kit of claim 1 wherein the elongated plate includes a
2 therapeutic agent.

1 23. The fixation plate kit of claim 22 wherein the therapeutic agent comprises one
2 or both of a bone growth regulating protein and a platelet derived growth factor.

1 24. The fixation plate kit of claim 1 wherein the kit further comprises one or both
2 of a screw driver and an allen wrench.

1 25. The fixation plate kit of claim 1 wherein the tine is integral with the elongated
2 plate.

1 26. The fixation plate kit of claim 1 wherein the distal portion includes at least
2 one opening and the tine is configured as an articulating member passing through the
3 opening.

1 27. The fixation plate kit of claim 26 wherein the articulating member is
2 configured to extend from the distal portion over multiple angles and orientations, and be
3 inserted into a radius.

1 28. The fixation plate kit of claim 26 wherein the first opening includes an
2 outwardly extending rounded surface and the articulating member includes a head having a
3 concave articulating portion configured to articulate against the rounded surface.

1 29. The fixation plate kit of claim 28 wherein the articulating portion has an
2 elongated shape.

1 30. The fixation plate kit of claim 28 wherein the articulating portion has a
2 hemispherical shape.

1 31. The fixation plate kit of claim 1 wherein the tensioning device comprises a
2 tie-band.

1 32. The fixation plate kit of claim 1 wherein the tensioning device comprises a
2 molly bolt system.

1 33. The fixation plate kit of claim 1 wherein the tensioning device is configured to
2 be under tension when mounted to the elongated plate.

1 34. A fixation plate for the fixation of a distal radius fracture, the fixation plate
2 comprising:

3 an elongated plate configured to be mounted to the volar surface of the distal radius
4 and having a distal portion and a proximal portion, the distal portion extending from and
5 forming an angle with the proximal portion, and including at least one opening;

6 at least one tine configured as an articulating member for passing through the
7 opening; and

8 at least one tensioning device configured to pass through an opening in the distal
9 and/or proximal portion, through a channel in the radius, and to be tightenable to fix the
10 distal or proximal portion to the radius.

1 35. The fixation plate of claim 34 wherein the fixation plate is a component in a
2 fixation plate kit comprising one or more of a drill bit configured to drill a hole in bone
3 tissue, a guide for drilling holes in bone to place the tine, written instructions for use, an
4 instructional video, a tensiometer mounted to the tine and configured to measure a tension in
5 the tine, a monitor configured to receive a signal indicative of strain in the tine from the
6 tensiometer, and a therapeutic agent.

1 36. The fixation plate of claim 34 wherein the articulating portion has an
2 elongated shape.

1 37. The fixation plate of claim 34 wherein the articulating portion has a
2 hemispherical shape.

1 38. A method of repairing a distal radius fracture, the method comprising:

2 providing a fixation plate comprising an elongated plate configured to be mounted to
3 the volar surface of the distal radius and having a distal portion and a proximal portion, the
4 distal portion extending from and forming an angle with the proximal portion and one or
5 more tines extending from the distal portion;

6 providing one or more tensioning devices configured to pass through one or more
7 openings in the proximal portion and/or the distal portion, through a channel in the radius,
8 and to be tightenable to fix the proximal portion to the radius;

9 forming one or more channels in the distal radius for receiving the one or more tines;

10 forming one or more channels in the radius for receiving the one or more tensioning
11 devices;

12 placing the one or more tines in the one or more channels in the distal radius; and

13 placing the one or more tensioning devices in the one or more channels in the radius..

1 39. The method of claim 38 wherein the tine is integral with the fixation plate.

1 40. The method of claim 38 wherein the distal portion of the plate includes at least
2 one opening and the tine is configured as an articulating member to pass through the opening,
3 and placing the one or more tines in the one or more channels in the distal radius comprises
4 passing the articulating member through the opening in the distal portion of the plate and into
5 the channel.